User's manual

GB

Version 1.1 December 2005

X V-AMP

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JUST LISTEN.

IMPORTANT SAFETY INSTRUCTIONS

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CAUTION: To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside; refer servicing to qualified personnel.

WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure—voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

DETAILED SAFETY INSTRUCTIONS:

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15) CAUTION - These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions unless you are qualified to do so.

X V-AMP

Ultra-Flexible Modeling Amp/Multi-Effects Processor with Integrated Expression Pedal

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- 16 original V-AMP amp/speaker simulations, including a special acoustic simulation and amp bypass function
- Freely assignable expression pedal for real-time control of effects or wah/volume control
- 24-bit high-resolution stereo multi-effects processor including first-class stomp box simulations, delay, wah wah, chorus, flanger, reverb, noise gate and compressor effects and many more
- Amp and cabinet simulation, compressor, noise gate, EQ, modulation effects, delay and reverb can be used simultaneously in any combination
- Awesome modulation and pitch bend effects
- Dedicated semi-parametric EQs for low-end and presence control
- 9 different output configurations for utmost flexibility
- 100 memory locations—easily editable and storable
- 2 separate 1/4" TRS outputs usable as stereo line/phones and guitar amp input
- 2-digit numeric LED display and intuitive control elements allow visual feedback while editing
- Adjustable, super-precise auto-chromatic tuner
- Power supply included
- High-quality components and exceptionally rugged construction ensure long life
- Conceived and designed by BEHRINGER Germany

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FOREWORD

Dear Customer,

welcome to the team of X V-AMP users, and thank you very much for expressing your confidence in BEHRINGER by purchasing the X V-AMP.

Writing this foreword for you gives me great pleasure, because it represents the culmination of many months of hard work delivered by our engineering team to achieve a very ambitious goal: to present an outstanding guitar multi-effects floor unit whose amazing functions offer a maximum on flexibility and performance. The task of designing our new X V-AMP certainly meant a great deal of responsibility, which we assumed by focusing on you, the discerning user and musician. Meeting your expectations also meant a lot of work and night shifts. But it was fun, too. Developing a product usually brings a lot of people together, and what a great feeling it is when all who participated in such a project can be proud of what they've achieved.

It is our philosophy to share our enjoyment with you, because you are the most important member of the BEHRINGER team. With your highly competent suggestions for new products you've made a significant contribution to shaping our company and making it successful. In return, we guarantee you uncompromising quality as well as excellent technical and audio properties at an extremely reasonable price. All of this will let you give free rein to your creativity without being hampered by budget constraints.

We are often asked how we manage to produce such high-quality equipment at such unbelievably low prices. The answer is quite simple: it's you, our customers! Many satisfied customers mean large sales volumes enabling us to get better purchasing terms for components, etc. Isn't it only fair to pass these benefits on to you? Because we know that your success is our success too!

I would like to thank all of you who have made the X V-AMP possible. You have all made your own personal contributions, from the developers to the many other employees at this company, and to you, the BEHRINGER user.

My friends, it's been worth the effort!

Thank you very much,

Uli Behringer

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1. INTRODUCTION

Congratulations! By purchasing the X V-AMP, you've got your hands on the latest-generation floor-based effects machine.

The X V-AMP gives you extensive options to create an awesome stage show. The latest technology, simple and intuitive operation and robust construction result in optimal performance and dependability.

Your X V-AMP unites a selection of the best and most-liked effects and amp simulations from our venerable V-AMP 2. These effects and amp simulation can of course be edited and stored. Additional features, such as compressor, noise gate and the most current modulation effects, give you a maximum on flexibility and let your creativity come to full expression.

1.1 Before you get started

Your X V-AMP was carefully packed at the factory to assure it will survive the rigors of the road. If the cardboard packaging looks like it's been through a lot, please inspect the contents and look for indications of damage.

☞ **In case your X V-AMP is damaged, DO NOT send it directly to us. Instead, first notify the store where you bought it as well as the carrier who made the delivery. Otherwise, you may void your warranty.**

Always make sure your X V-AMP gets enough air flow and never put it near the heating or other heat-emitting equipment to avoid damage to the device.

Power is delivered via the enclosed power supply. All requiered safety precautions have been adhered to. As soon as you connect the X V-AMP to the mains via the power supply, your X V-AMP is automatically switched on.

1.1.1 Online registration

Please do remember to register your new BEHRINGER equipment right after your purchase by visiting www.behringer.com (alternatively www.behringer.de) and kindly read the terms and conditions of our warranty carefully.

Should your BEHRINGER product malfunction, our goal is to have it repaired as quickly as possible. To arrange for warranty service, please contact the retailer from whom the equipment was purchased. Should your BEHRINGER dealer not be located in your vicinity, you may directly contact one of our subsidiaries. Corresponding contact information is included in the original equipment packaging (Global Contact Information/European Contact Information). Should your country not be listed, please contact the distributor nearest you. A list of distributors can be found in the support area of our website (www.behringer.com/support).

Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently.

Thank you for your cooperation!

2. CONTROL ELEMENTS AND CONNECTORS

In this chapter, we will describe different control elements of your X V-AMP. All controls and connectors will be explained in detail, and you will also get useful advice on how to use them.

2.1 Basic advice on using the controls

Here is some quick information about the most basic and most important control elements of your X V-AMP.

▲ Keys [3], [5], [7], [9] and [11]: use these keys to directly select effects settings and operating modes.

▲ FX/AMPS control [14]: Uset the right-hand half to select amp simulations in a preset. The corresponding LED lights up. Use the left-hand half to select the effects. When effects blocks are selected using the keys [7], [9] and [11], the LED on the current effect lights up.

▲ TAP LED [12]: The frequency at which the LED blinks indicates the speed and/or the rhythm of a delay or a modulation effect (also see chapter 6 “EFFECTS PROCESSOR”).

By keeping TAP depressed, 2nd FUNCTION [13] is activated. By doing this, the second level of the FX/AMPS control [14] (gray) and ADJUST [1] is accessible.

▲ Footswitches UP [16] and DOWN [17]: Used to select presets; these presets are indicated in the DISPLAY [15]. Footswitches UP [16] and DOWN [17] are also used to activate the BYPASS/TUNER function (also see chapter 7 “TUNER”).

▲ DISPLAY LEDs: PEDAL ASSIGN indicates the function to which the pedal has been assigned. CONFIGURATION permanently indicates the selected operating mode.

[1] *ADJUST*: Used to perform various adjustments. You can find more information about using ADJUST in the descriptions of individual control elements as well as in chapter 6 “EFFECTS PROCESSOR”.

GAIN. Use this control to regulate the drive of the amp simulation, i.e. the degree of distortion. Use it when none of the keys [3], [5], [7], [9] or [11] are blinking.

VOLUME: If you hold the TAP key [12] depressed, using ADJUST lets you adjust the volume of a preset.

[2] *STORE*. The presets on the X V-AMP are saved using the STORE key. If the STORE key lights up, it means that a preset has been changed but has not yet been stored. By keeping the STORE key depressed (longer than 2 seconds), the newly edited preset is stored. When the STORE LED is no longer lit up, the stored preset shown in the display is now active.

☞ **After briefly pressing the STORE key (the STORE key blinks), use the UP/DOWN keys to select another storage slot. By briefly pressing the STORE key yet again, the save procedure is canceled. Complete the save by keeping the STORE key depressed for longer than 2 seconds.**

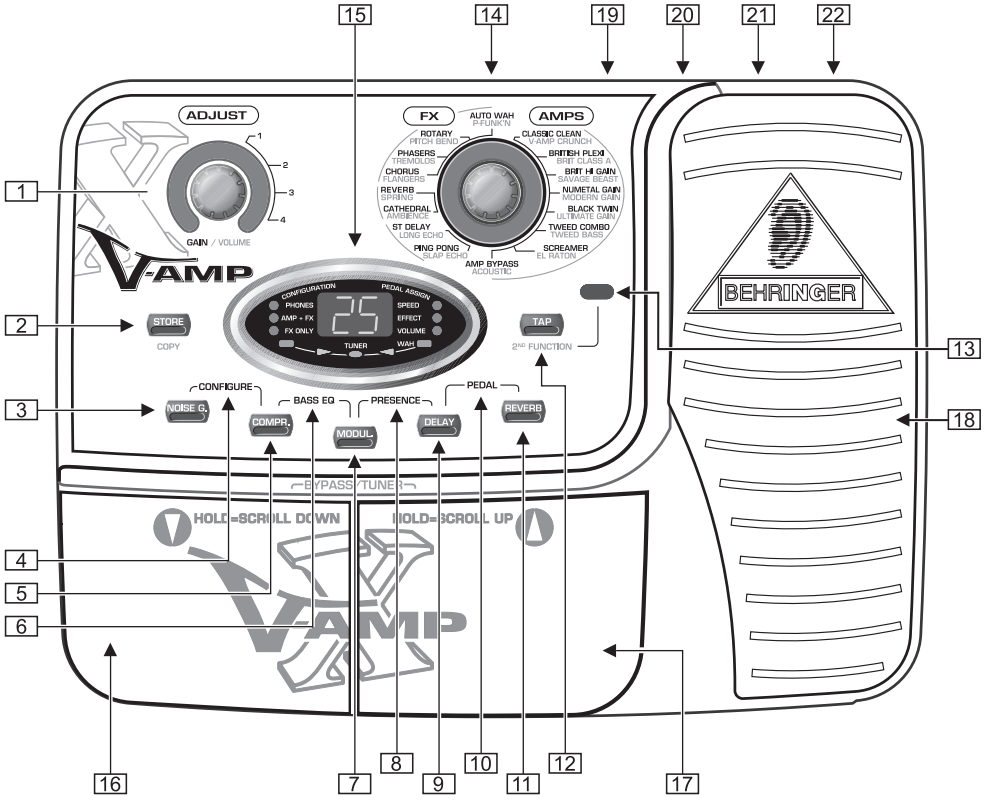

Fig. 2.1: X V-AMP user interface

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☞ **You can restore a single factory preset by keeping the TAP and STORE keys depressed simultaneously for longer than 2 seconds. You can also restore all factory presets. This is done by keeping both TAP and STORE keys depressed for longer than 2 seconds and then powering up the X V-AMP (i.e. you start the procedure when your X V-AMP is off).**

[3] *NOISE G.* The NOISE GATE is active and can be edited when the key LED is lit up. The threshold can be controlled by using ADJUST. When the ADJUST control is turned all the way to the left, the NOISE GATE is off and the LED is no longer lit up.

"Release" is adjusted using the ADJUST control while the TAP key is depressed.

How the NOISE GATE works is explained in chapter 6.1.3.

[4] *CONFIGURE.* By simultaneously pressing NOISE G. [3] and COMPR. [5], you get to the configuration menu. Use the COMPR. or NOISE G. keys to alternate between individual operating modes. This way, you can implement a global setting on your X V-AMP that lets you adjust to different studio and live situations. A table with all configurations as well as additional information on this subject can be found in chapter 3.

☞ **Press COMPR. and NOISE G. simultaneously again to leave CONFIG. mode.**

[5] *COMPRESSOR.* Press this key to get to the compressor menu. Use the ADJUST control to regulate "ratio", or use TAP + ADJUST to regulate "attack". When the ADJUST control is turned all the way to the left, the COMPRESSOR is off and the LED is no longer lit up.

How the compressor works is explained in chapter 6.1.3.

[6] *BASS EQ.* Simultaneously press COMPR. [5] and MODUL. [7] (both LEDs are blinking) to control bass frequencies in a preset. Use ADJUST to increase or decrease low frequencies. Keep TAP pressed while turning ADJUST to determine if you want to affect only the deepest frequencies (ADJUST turned all the way to the left) or if you also want to affect higher bass frequencies.

[7] *MODULATION.* After you press this key (its LED blinks), you can select one of the eight modulation effects by using the FX/AMPS control [14]: Chorus, flanger, phaser, pitch bend, tremolo, rotary, auto wah and P-funk'n. You get to the second-layer effects (gray) by keeping the TAP key depressed while you are turning the FX/AMPS control; the 2nd FUNCTION LED lights up. ADJUST controls the effect ratio in the preset. The speed parameter is adjusted using TAP. By hitting MODUL. [7] again, or by selecting a different parameter, you quit.

You can find a more detailed description of modulation effects and how they function in chapter 6 "EFFECTS PROCESSOR".

☞ **Modulation effects auto wah, pitch bend and P-Funk'n cannot be used simultaneously with Wah Wah. If you select one of these three effects while the pedal is already assigned to the wah wah effect, its assignment to the pedal is annulled (the WAH LED in the display is no longer lit up).**

☞ **Assigning the expression pedal to the Wah Wah effect automatically deactivates auto wah and pitch bend respectively, so that no modulation effect is active (all modulation effect and ADJUST LEDs are no longer lit up).**

[8] *PRESENCE.* You activate PRESENCE by simultaneously pressing MODUL. [7] and DELAY [9] (both LEDs are blinking). Starting at the middle setting of the ADJUST control (neutral), the share of PRESENCE (high frequencies) can be lowered or increased in a preset. Keeping TAP pressed while you turn ADJUST allows you to determine the center frequency of the filter.

[9] *DELAY.* Pressing this key adjusts DELAY. A delay lets you create a lag in the input signal similar to an echo. Use ADJUST to regulate the intensity; when you keep TAP pressed while you turn ADJUST, you set up feedback. The rhythm in which you tap at the TAP key determines the time between individual echos.

[10] *PEDAL ASSIGN.* Press DELAY [9] and REVERB [11] simultaneously to assign a function to the EXPRESSION PEDAL ("PA" is shown in the display). At the same time, one of the right-hand LEDs in the display is blinking (speed, effect, volume, wah). Now you can assign one of the following functions to the pedal:

▲ **Speed:** to dial up the SPEED parameter of an effect, hit the respective effect module key ([7] or [9]) and then briefly press TAP: SPEED, TAP and effect key LEDs are blinking.

▲ **Effect:** To modify effect parameters "mix", "depth", "feedback" and "decay" using the pedal, press the effect module key of your choice and then modify the desired parameter (either using ADJUST or ADJUST + TAP): the EFFECT LED blinks in the display (2nd FUNCTION and the effect key where applicable).

▲ **Volume:** If you want to use the expression pedal to control the volume, hold TAP and briefly move ADJUST. The 2nd FUNCTION and VOLUME LEDs blink.

▲ **Gain:** To use the expression pedal to control GAIN in a preset, you only have to quickly modify GAIN using ADJUST (VOLUME LED blinks); then, use the pedal to modify GAIN.

▲ **Wah Wah:** Pressing the expression pedal automatically selects the wah function. The Wah LED blinks.

☞ **Summary: To assign a parameter to the expression pedal, you have to activate "PEDAL ASSIGN" and modify the desired parameter.**

☞ **Auto wah and pitch bend are automatically deactivated as long as the expression pedal controls the Wah Wah effect.**

☞ **To confirm a new selection you made and to abandon PEDAL ASSIGN, hit DELAY [9] and REVERB [11] at the same time again.**

[11] *REVERB.* Press this key to set up REVERB. A reverb effect lets you simulate room characteristics in the overall sound. You can choose between 4 different reverb types: Ambience, cathedral, spring and reverb. The FX/AMPS control lets you select between reverb and cathedral, and if you keep TAP pressed at the same time, then you can additionally select between spring and ambience (second layer).

The adjustable reverb parameters are decay and mix.

ADJUST controls the mix, and ADJUST + TAP control decay.

A description of individual reverb types can be found in chapter 6.2.

[12] The *TAP* key performs several functions:

▲ GAIN/VOLUME: Use ADJUST to determine the amount of distortion (GAIN). If you keep TAP pressed while you move ADJUST, you control the volume of a preset instead.

When editing effect blocks, ADJUST lets you access the second function layer for parameter settings.

▲ FX/AMPS control and 2nd FUNCTION: Hitting TAP lets you select the second layer of the effects and AMP simulations (gray).

▲ Speed: Keep hitting the TAP key in the rhythm of a song, and the selected effect (delay or modulation effect) adjusts itself automatically to the tapped rhythm.

[13] *2nd FUNCTION*. As soon as any second-layer function on the FX/AMPS control is dialed up, 2nd FUNCTION LED lights up.

[14] *FX/AMPS*. A LED on the FX/AMPS control indicates the current AMP model. If the 2nd FUNCTION LED is also lit up, you're dealing with one of the second-layer AMP models (gray); if not, then one of the first-layer AMP models is selected (white). By turning FX/AMPS (and by holding tap, if necessary), you can switch to another AMP model.

IF the effect block is selected (MODULATION [7], DELAY [9] or REVERB LED [11] blinks), the respective effect type can be read-off and selected using the FX/AMPS control. By turning the FX/AMPS control (and by holding TAP, if necessary), you can switch to another effect.

☞ **If one of the AMPS LEDs lights up (right half), use ADJUST to control either GAIN or VOLUME.**

☞ **If one of the EFFECT LEDs lights up (left half), use ADJUST to control the respective effect parameters.**

[15] The *DISPLAY* indicates which preset has been selected and gives information on the modifications done during editing. When the TUNER is activated, the DISPLAY indicates which tone is played on the instrument you connected to your X V-AMP.

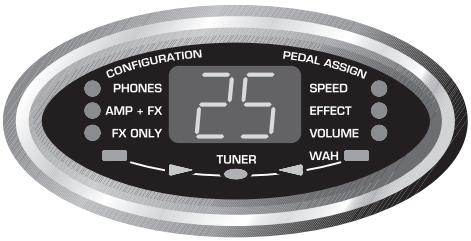

Fig. 2.1: X V-AMP display

[16] *DOWN*. Use this footswitch to dial down presets (99 - 00, downwards). Keep the footswitch depressed longer to skip through the presets downwards.

[17] *UP*. Use this footswitch to dial up presets (00 - 99, upwards). Keep the footswitch depressed longer to skip through the presets upwards.

☞ **By simultaneously pressing both footswitches, the TUNER/BYPASS mode is activated. To deactivate it, you can simply press one of the footswitches. Additional information on the TUNER can be found in chapter 7 "TUNER".**

[18] *EXPRESSION PEDAL*. The expression pedal controls (among others) the Wah Wah effect. The switch located beneath the pedal switches the Wah Wah on and off in this case.

PEDAL ASSIGN lets you assign another function to the pedal (e. g. volume, effect intensity etc.). See also [10].

[19] *LINE OUT/PHONES*. You can take the audio signal of your X V-AMP at the LINE OUT/PHONES connector. You can either connect your headphones to the X V-AMP, or connect the X V-AMP to a mixer.

[20] *MONO AMP OUT*. Connect the input of your guitar amp here. In contrast to the LINE OUT/PHONES signal, this signal is reproduced with a level that is 20 dB lower.

[21] *INSTRUMENT INPUT*. This is the 1/4" jack input of your X V-AMP. Connect your instrument here. Always use high-quality 1/4" mono jack cables.

[22] *AC IN*. Connect the enclosed power supply to the AC IN connector. As soon as you plug the power supply into the mains, your X V-AMP is automatically "on". More information on the power supply can be found in chapter 9 "SPECIFICATIONS".

[23] *SERIAL NUMBER*.

3. OPERATING MODES (CONFIGURATIONS)

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An outstanding characteristic of the entire V-AMP product line is the freedom to personally select which signal segments (according to your own needs and desires) will be fed to the outputs. To optimally adjust your X V-AMP to various studio and live situations, you can select one of the 9 possible configurations. These configurations assign where individual signals for line outputs and headphone outputs are coming from—and all this independent from the settings stored in the presets.

3.1 Selecting a CONFIGURATION

When you press NOISE GATE [3] and COMPRESSOR [5] at the same time, CONFIGURATION mode is activated or deactivated. The key LEDs are blinking as long as you are in CONFIGURATION mode.

Dialing up individual configurations in CONFIGURATION mode is done by using NOISE G. [3] and COMPR. [5]. A table with the respective configurations is shown below.

Volume is adjustable globally by using the ADJUST control.

Input gain can be adjusted using ADJUST + TAP, so that you can adjust your X V-AMP globally to instruments with varying output signal levels, whereby the following goes: a higher setting is for quieter instruments, and a lower setting is for louder instruments.

OPERATING MODE		X V-AMP CONFIGURATION
PHONES (with all speaker and amp simulations)	P1	**FLAT:** Neutral EQ
	P2	**LOUDNESS:** Increasing bass and highs
	P3	**PRESENCE:** Accentuation of upper mids, lowering of bass tones
AMP + FX (without speaker simulations)	A1	**FLAT:** Neutral EQ
	A2	**LOUDNESS:** Increasing bass and highs
	A3	**PRESENCE:** Accentuation of upper mids, lowering of bass tones
only FX (without speaker and amp simulations)	F1	**FLAT:** Neutral EQ
	F2	**LOUDNESS:** Increasing bass and highs
	F3	**PRESENCE:** Accentuation of upper mids, lowering of bass tones

Tab. 3.1: Operating modes (CONFIGURATIONS)

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3.2 Application (example)

Our example shows a typical X V-AMP application: Connection to a guitar amp (BEHRINGER V-TONE GMX212) using operating modes A1-F3 (without speaker simulation). The V-TONE GMX212 features a stereo aux input, while many other amps have only a mono instrument input. For jam sessions at your own pad, connect a set of high-quality headphones (e.g. our BEHRINGER HPS3000) to the LINE OUT/PHONES connector.

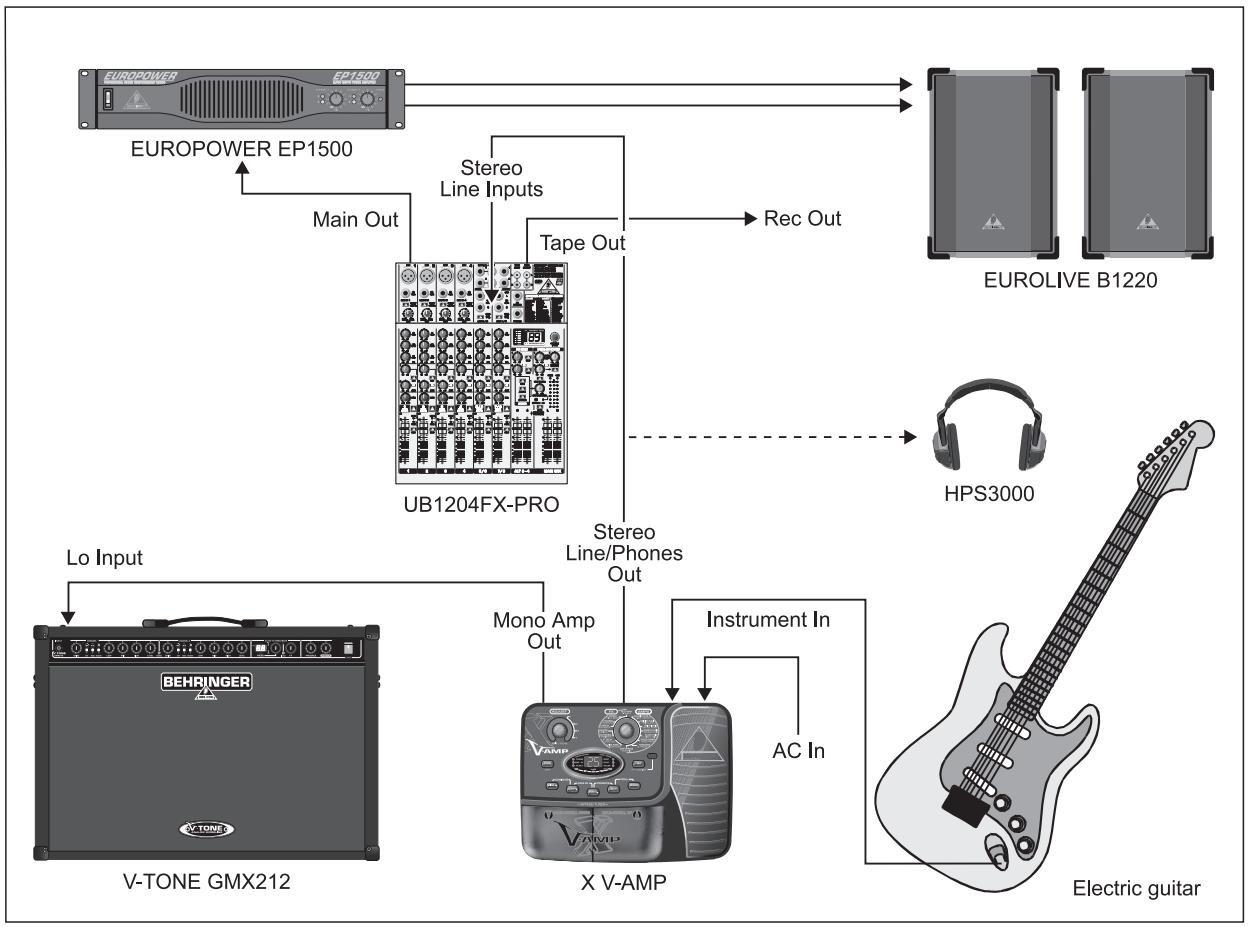

Fig. 3.1: Standard application (example)

4. PRESETS

Your X V-AMP features 100 user-rewritable presets (00 - 99). Each preset consists out of a maximum of 7 “ingredients”:

- amp simulation,
- speaker simulation,
- pre-amp effects (noise gate, compressor, Wah Wah),
- adjustable presence and bass EQs,
- modulation effect (e.g. phaser, chorus etc.),
- delay effect and
- reverb.

When the STORE key lights up, it means that a preset was modified but has not been stored yet. When the STORE LED is no longer on, the stored preset shown in the display is active. When the STORE key blinks (briefly press STORE), you can use the UP/DOWN footswitches (16 & 17) to dial up another storage space, where you can then store the current settings. Storing is done by keeping the STORE key pressed longer than 2 seconds.

A *single* factory preset can be restored by keeping TAP + STORE pressed for longer than 2 seconds. You can also restore *all* factory presets by keeping TAP + STORE pressed for longer than 2 seconds while you are powering up your X V-AMP.

When you dial up a preset or when editing a preset is complete, the key LEDs indicate the active blocks.

4.1 Calling up presets

The preset you used last is always automatically recalled when you turn your X V-AMP on.

4.2 Editing presets

Editing presets on your X V-AMP is quick and easy to do. One way to do this is to call up a preset of your choice and then modify it according to your own taste. Select an amp model of your choice by turning the FX/AMPS control.

The STORE LED is lit up, signalizing that you have modified a preset. If you now wish to add a modulation effect to this preset, simply press the MODUL key 7 . Now you can use the FX/AMPS control to make a selection among the effects. To store your settings, keep the STORE key pressed for about 2 seconds.

☞ **Almost all delay and modulation effects feature a tempo or time parameter. Say, you want to adjust an effect to the tempo of your playback material: To do this, tap the TAP key at least twice in the beat of your music. The effect tempo adjusts itself automatically to the tempo of your music.**

4.3 Storing presets

When the STORE key is blinking (briefly pressing STORE) you can use the UP/DOWN footswitches (16 & 17) to dial up another storage slot so you can store your current settings at this location. You store your settings by keeping the STORE key pressed for longer than 2 seconds.

4.4 Discarding an edited preset/ restoring a single factory preset

If you have edited a preset and find that you don't like the edited version, simply choose a different preset to discard your edits. You can restore a *single* factory preset by keeping TAP + STORE depressed for longer than 2 seconds.

4.5 Restoring all factory presets

Restoring *all* factory presets is done by keeping TAP + STORE depressed for longer than 2 seconds while you power up the X V-AMP.

5. AMP/SPEAKER SIMULATION

The very heart of your X V-AMP is its amp/speaker simulation. The X V-AMP makes it a child's play for you to choose one of the legendary guitar amps, be it for brit pop, blues, heavy metal or whatever. In addition, you can tailor the sound of the respective amp to suit your ideas. On top of all that, you can even choose digital effect and reverb types for your virtual amp. See chapter 6 "EFFECTS PROCESSOR" for more details.

When you turn on your X V-AMP, it automatically loads the last preset selected. The LED ring around the FX/AMPS control shows what amp has been selected. The corresponding LED lights up. To select another amp simply turn the control.

To give you a better overview of the extensive range of amp simulations on the X V-AMP, we have compiled the following descriptions of the different types of amps.

CLASSIC CLEAN: Back in the '80s, the Roland JC-120 was the preferred sound of Buzzy Feiten (guitarist with the Dave Weckl Band). The unique quality of this transistor amp's sound is the way its brilliance cuts through any mix. It is ideal for the New Wave sound of the '80s that is making a come-back today. By the way, the JC-120 was also popular among Fender Rhodes pianists.

V-AMP CRUNCH: This amp is ideal for modern blues or jazz. Its sound is not too subtle, but not in-your-face either—it's crunchy, that's all.

BRITISH PLEXI: This amp model, created by leaning closely to a '59 Marshall Plexi 100-Watt amp, is particularly well suited for creating clean sounds. The amp was used by Jimi Hendrix, Eric Clapton and Jeff Beck.

BRIT CLASS A: This simulation is modeled on the Vox AC 30. This amp was originally designed in the '60s when guitarists wanted amps with enhanced brilliance, a feature that Vox successfully implemented by means of "revolutionary" bass and treble controls. Brian May and U2's The Edge are probably the best-known users of this sound.

BRIT HI GAIN: Compare this model with a Marshall JCM 800. Although the original was renowned mainly for its distorted sounds, this amp also sounds very good with low gain settings. It's good at reproducing Steve Ray Vaughan's and Michael Landau's sounds. In distortion mode it sounds like Gary Moore in his early days, but it's also good for heavy metal.

SAVAGE BEAST: Engl is well-known for amps that really cut through. The Savage 120 in particular has built up a large following among guitarists. For some time now Ritchie Blackmore has been a major endorser of this German company, and Randy Hanson, the best Hendrix since Jimi, also swears by this amp. The unique feature of the Savage is its extreme power and is therefore highly popular with heavy metal guitarists. Silent Force/Sinner guitarist Alex Beyrodt has been an enthusiastic Engl user for years. An amp for making yourself heard!

NUMETAL GAIN: This model is based on a 1994 Mesa Boogie Dual Rectifier Trem-O-Verb featuring a modern, high-gain sound that also comes over well in a band context.

MODERN GAIN: Here, the tone control is post-gain, allowing the extremely distorted sound to cut through the mix. The MODERN HI GAIN sound is ideal for playing grunge, but is also used by guitarists such as Steve Vai and Joe Satriani. Among others, Steve Lukather, Nuno Bettencourt and Steve Vai have all popularized the Soldano sound. If you're playing a Gibson Les Paul, MODERN HI GAIN sounds best when you turn down the volume control on the guitar a little.

BLACK TWIN: This simulation was modeled on a Fender Blackface Twin from 1965. In the '60s this amp was used by jazz, country and even rock guitarists. What was unique about it was that it was exceptionally loud and was therefore mainly used for live performances. The secret of the Blackface Twin was that although you could play it extremely loud, the distortion remained relatively low.

ULTIMATE GAIN: From clean to brutal hi-gain, this "brute" covers the entire range. The ULTIMATE V-AMP is basically a souped-up rectifier amp.

TWEED COMBO: This was Jeff Beck's favorite when he recorded the albums *Blow by Blow* and *Wired*. This amp was not actually designed for heavy distortion, but due to its low power, it is ideal for uncompromising overdrive sound.

TWEED BASS: This virtual amp is modelled on the Fender 4 x 10 Combo. Originally designed as a bass amp, it soon became a standard amp of blues legends such as Steve Ray Vaughan or Billy Gibbons due to its characteristic distortion. As you would expect, it packs a solid punch in the bass range, but is still flexible enough in the mid and treble ranges.

SCREAMER: Having been around since the beginning of the '80s, the Ibanez Tube Screamer TS808 has pretty much achieved cult status. It has the reputation of being the ultimate classical overdrive/treble booster floor pedal, and is associated with mighty lead sounds, even though it offers rather modest distortion. Its *secret* is that it "knows" better than other floor pedals how to squeeze the very last bit out of the amp to which it is connected. If you hook up a decent tube amp to your X V-AMP (e. g. the BEHRINGER AC112), with this simulation you can authentically reproduce the effect of the tube screamer—all this without dishing out too much cash to own a cult piece of equipment.

EL RATON: The Rat from ProCo was also a distortion pedal similar to the tube screamer, and it also came around about the same time, but its basic sound and applications couldn't be more different. As the name suggest, the *rat* is all about aggressive distortion from the pedal itself, and the TS808 is more about unobtrusive overdrive in the amp further down the chain. With the rat simulation, you have the metal sound of the early '80s totally covered.

AMP BYPASS: In this setting, no amp simulation is selected. This makes it possible, for example, to play through an external guitar preamp and only use the effects.

ACOUSTIC: A guitar with steel strings miked with a dynamic microphone is simulated here. While piezo pickups have the tendency to make the sound rather hard, using a mic makes the sound much more evened-out. Of course, the feedback typical for miking acoustic instruments is no longer an issue.

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6. EFFECTS PROCESSOR

A special feature of your X V-AMP is its built-in multi-effects processor module offering 16 different groups of first-class effects such as chorus, flanger, delay, auto wah as well as various combinations of effects. You can select one effect out of each of the three effects blocks (modulation, delay and reverb).

☞ **The standard operating mode of the multi-effects processor is stereo, so you can use stereo effects for recording purposes via the LINE OUT or play in stereo using a second amplifier.**

☞ **To match speed-based effects to the tempo of the music, please press the TAP button at least twice in the beat of your music.**

6.1 Effect descriptions

The following section contains short descriptions of the effects that you can use.

6.1.1 Reverb and delay algorithms

The delay effects can be modified in three parameters:

- Turn ADJUST to modify “mix”

- Turn ADJUST while TAP is pressed to modify “feedback”, and

- Tap the TAP key in the rhythm of your music to modify “delay time”.

STEREO DELAY: Delays the input signal. Different tempo settings let you create a wide array of delay effects. Be experimental, try going from short to very long delays.

LONG ECHO: What’s so special about this delay effect is that the repetition interval of the echos is 50% longer than the time interval measured between two taps on the TAP key. This way, you can create a frequently used echo effect very simply: if you tap and play in quarter-note, the echos are located three eighths away. What the whole thing can sound like is best demonstrated by U2’s guitarist *The Edge*.

SLAP ECHO: As the name suggests, a delay with a very short repetition interval. The X V-AMP takes a half of the time interval measured between the taps on TAP. The echo velocity doubles.

PING PONG: A delay effect that changes position in the stereo image.

6.1.2 Modulation effects

If modulation effects have been selected (key LED [7] blinks), you can modify up to four parameters on each effect:

- By turning ADJUST (effect intensity),

- by turning ADJUST while TAP is pressed (second parameter, please see respective effect description),

- by turning ADJUST while both TAP und MODUL. keys are pressed (third parameter), you can dial up a different effect model (1 - 4), and

- by tapping at the TAP key in the rhythm of music (modulation/ speed tempo).

PHASER: The principle behind a phaser is that a second, phase-shifted signal is added to the audio signal. This makes the sound richer and, above all, livelier. This effect has been popular for decades because it can be used to produce slightly modulating or strongly alienating effects, regardless of what instrument you are using. Two of the classic versions of this effect that we simulate are the four-level MXR Phase 90 (1) and the 12-level Boss PH2 (4). Additionally, the X V-AMP offers two additional rare versions of an 8-level (2) and a 10-level (3) phaser.

The second parameter controls resonance, the third controls the phaser model (1 - 4).

PITCH BEND: The Digitech Whammy pedal and the PS5 Super Shifter from Boss are extremely well-liked effects that produce an effect signal that is out of tune with the input signal. Models 1 - 4 offer the best pitch bend effects.

Use ADJUST to determine “mix”.

The PS-5 pitch shifter (1) creates a fixed interval consisting of several half-tone steps to the input tone. With the T-Arm simulation (2), this interval is active only as long as the pedal key [18] is pressed. The tempo at which the interval is reached can be modified using the TAP key.

With the Whammy effect (3), detuning depends on the position of the pedal (pedal up = original tone pitch, pedal down = the interval entered under (2)).

In contrast to the pitch shifter, the detune effect (4) creates a modest out-of-tune interval, consisting of only a fraction of a half-tone. It sounds roughly like a permanently activated chorus.

The second parameter controls how much your tone detunes:

- for models 1 to 3 (-12/-7/-5/-3/+3/+4/+5/+7/+12 half-tones),
- for model 4 (-20 to +20% of a half-tone).

The third parameter lets you select between different effects modules: pitch shift (1), T-Arm (2), Whammy (3) and detune (4).

☞ **Since pitch bend effects 2 and 3 require the expression pedal, this automatically disengages other expression pedal functions, such as Wah Wah. In this case, the pedal assign effect LED lights up.**

TREMOLO: Simulates the classic Fender DeLuxe tremolo as well as the Vox AC15 and Gate tremolo. Ever since Trip Hop gained on importance, this volume modulation effect is totally in.

The second parameter controls the dependence of modulation tempo on volume: loud input signal = quicker modulation, lower input signal = slower modulation.

The third parameter lets you alternate between different tremolo types: Fender (1), Vox (2), Gate (3) and Panning (4).

ROTARY: This is the quintessential simulation of the classic organ effect normally produced by speakers rotating at slow or fast speed in an extremely heavy speaker cabinet. This effect uses the physical principle of the Doppler effect to modulate the sound.

The second and the third parameters control modulation sound.

FLANGER: This effect is self-explanatory. Originally the flanger effect was produced by running two synchronized tape recorders at the same time. The same signals (e.g. a guitar solo) were recorded on both machines. Putting a finger on the left reel of one of the machines caused it and the speed of the playback to slow. The resulting delay produced phase shifts of the signals. Outstanding examples of this effect genre are for example the Ultra Flanger on the BF-3 from Boss (1), and the classic BF-2 (2) as well as the Flanger from MXR (3) and A/DA (4).

The second parameter controls the resonance (effect feed-back to the input), and the third parameter selects the flanger model (1 - 4).

CHORUS: This effect adds a slightly modulated off-key element to the original signal, thus creating a pleasant floating effect through variations in pitch. One of the most often used studio chorus effects was the Tri Stereo Chorus, with its 12 (!) voices that are modulated against each other. The X V-AMP offers you this effect in two versions (1, 2). Two additional classics are the Boss Chorus Ensemble CE-1 (3) and the Roland Dimension D (4).

The second parameter controls modulation depth, and the third parameter selects the chorus model (1 - 4). Modulation speed can be determined using the TAP key. High depth and speed values create a signal that is noticeably out of tune.

AUTO WAH: The American funk in the ’70s proved that auto wah had many possible applications. Instead of regulating the filter frequency with your foot, our effect does this automatically, depending on the signal level. In doing so, our effect is similar to the EHX MuTron III in the up position.

The second parameter determines how quickly the filter is shifted; the third parameter selects the effects block (1 - 4).

P-FUNK’N: This is our attempt at replicating the legendary MuTron III, and we succeeded! The most famous user of this effect is probably Bootsy Collins. The MuTron III had an up/down switch. Here, the effect resembles the MuTron in the down position.

The second parameter determines how quickly the filter is shifted, while the third parameter determines the effects block (1 - 4).

6.1.3 Special effects

WAH WAH: The legendary Wah Wah effect owes its fame mainly to Jimi Hendrix. Describing it is certainly more difficult than simply listening to Hendrix using it on Voodoo Chile.

☞ **Wah Wah is not available when auto wah, P-Funk’n or pitch bend are being used.**

COMPRESSOR: Our simulation is based on the well-known MXR Dyna Comp. A compressor limits the dynamic range of a signal, in that the signal level is reduced as soon as a pre-determined threshold is exceeded. A compressor lets you achieve noticeable and creative sound effects. How strongly the compressor kicks in is controlled using ADJUST, allowing you to achieve apparent sustain). When ADJUST is turned all the way to the left, the compressor function is deactivated.

The second parameter (attack) controls the amount of time that the compressor needs to react, once the threshold has been exceeded. If you set up a short attack time, the compressor will react very fast.

NOISE GATE: Noise gates are used to remove or reduce noise or other interference. Guitar signals in particular are very sensitive to interference. Not only do guitarists often use high-gain settings but guitar pick-ups can amplify unwanted interference. This can be painfully apparent during breaks in the music. And how does a noise gate work? It simply mutes the signal during breaks, eliminating any interference at the same time.

The ADJUST control determines, when the noise gate starts processing. This control lets you decide if you want to suppress background noise more or less pronouncedly. When ADJUST is turned all the way to the left, the noise gate function is deactivated.

The second parameter (release) determines the time that the noise gate remains open after it had fallen below the threshold. If you set up a short release time, this means that the noise gate will suppress the signal very soon after it detects noise.

6.2 Reverb

The reverb is still one of the most important effects in a mix or at a live event. BEHRINGER offers you four different reverb programs, so that you can always find the kind of reverb that fits your excact situation:

Ambience: short room simulation without reverb tail.

Cathedral: a long, rich reverb, like in a cathedral.

Spring: typical sound of a classic spring reverb.

Reverb: universal, warm reverb simulating a concert hall.

ADJUST controls the reverb intensity, while the second parameter determines decay.

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7. TUNER

The integrated tuner is activated/deactivated by simultaneously pressing both footswitches. In doing so, the X V-AMP is switched into bypass mode. Use ADJUST to modify bypass volume.

7.1 Tuning your guitar

The chromatic tuner automatically recognizes the frequencies of all the standard guitar notes. For the a string this means a frequency of 110 Hz. When you plug your guitar into the X V-AMP and play an open string, the tuner will recognize and display the note. Since the tuner uses an auto-chromatic scale, it can also recognize semi-tones, which are shown with a “b” in the display.

It may happen, however, that a note is displayed as “A” but is actually slightly out of tune. This is shown by at least one of the four LEDs at the foot of the display lighting up. In certain cases even two of the LEDs may light up, which indicates that the pitch of the note played lies between the pitches represented by the two LEDs. When the circular tuner LED in the middle lights up, this means the note played is in tune.

7.2 Setting reference pitch “A”

To give you maximum freedom for tuning your guitar, you can change the preset reference pitch “A”. For clarity’s sake, let’s look at this in more detail.

The so-called concert pitch “A” has been raised steadily over time. For example, the tuning forks used by Bach, Händel or Mozart were 415, 420 or 421 Hz (oscillations per second). Today’s orchestras tune to “A” at 444 Hz, and the Berlin Philharmonic Orchestra lead the field with their own concert pitch “A” at 447 Hz.

The reference “A” on your X V-AMP has been factory-programmed at 440 Hz. If you are going to play with a big orchestra tuning their instruments to a reference pitch of 444 Hz, you will need a function that allows you to change your reference pitch. To activate this function, switch on the tuner by pressing both footswitches simultaneously. Then, keep TAP pressed down to start calibrating the tuner. The display will show “40”, which means 440 Hz. Use ADJUST to raise or lower the reference pitch by up to 15 Hz. The display always shows the last two digits as the first digit is always 4. To quit, simply release TAP. Any changes will be stored automatically. The tones for the other strings on your guitar will automatically be adjusted to the new reference pitch.

8. INSTALLATION

8.1 Audio connections

The input of your BEHRINGER X V-AMP is a mono 1/4" TS connector. The line out/headphone output comes as 1/4" TRS stereo connector. The line output works with both balanced and unbalanced connections.

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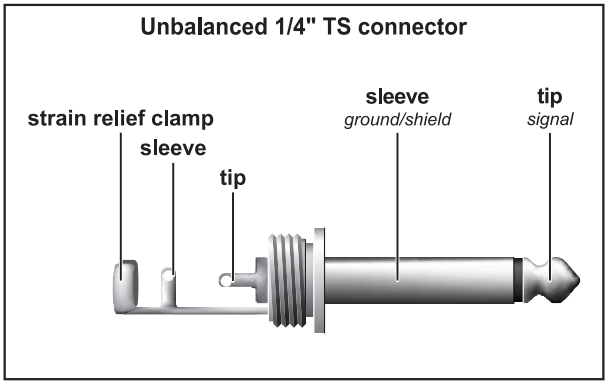

Fig. 8.1: 1/4" TS connector

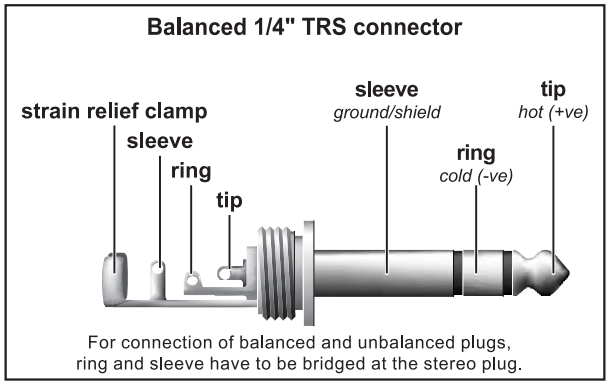

Fig. 8.2: 1/4" TRS connector

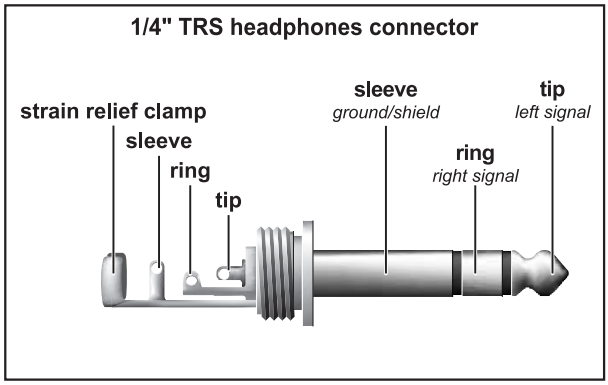

Fig. 8.3: Headphones connector

9. SPECIFICATIONS

INSTRUMENT INPUT

Type	1/4" TS connector, unbalanced
Input impedance	approx. 1 MΩ
Max. input level	+5 dBu

LINE/HEADPHONE OUTPUT

Type	1/4" TRS stereo connector, balanced
Output impedance	approx. 50 Ω
Max. output level	+13 dBu @ 10 kΩ / +18 dBm @ 100 Ω

MONO AMP OUTPUT

Type	1/4" TS connector, unbalanced
Output impedance	approx. 100 Ω
Max. output level	-7 dBu

DIGITAL SIGNAL PROCESSING

Converter	24-bit Delta-Sigma, 64/128-times oversampling
Dynamics A/D	100 dB @ preamp bypass
Dynamics D/A	95 dB
Sample rate	31.250 kHz
DSP	100 Mips
Delay time	max. 1960 ms stereo
Run time (Line In >> Line Out)	approx. 5 ms

DISPLAY

Type	2-digit, 7-segment LED display

POWER SUPPLY

Mains voltage	USA/Canada	120 V~, 60 Hz
	U.K./Australia	240 V~, 50 Hz
	China/Korea	220 V~, 50 Hz
	Europe	230 V~, 50 Hz
	Japan	100 V~, 50 - 60 Hz
Power consumption	max. 7 W	
Mains connection	external power supply (2-pole)	

DIMENSIONS/WEIGHT

Dimensions (H x W x D)	approx. 70 mm (2 3/4") x 235 mm (9 1/4") x 175 mm (6 7/8")
Weight	approx. 0.75 kg (1.65 lbs)
Shipping weight	approx. 1.75 kg (3.85 lbs)

BEHRINGER constantly strives to maintain the highest quality standards. Modifications may be made, if necessary, without prior notice. The specifications and appearance of the equipment may therefore differ from those listed or illustrated.

10. WARRANTY

§ 1 OTHER WARRANTY RIGHTS AND NATIONAL LAW

1. This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.

2. The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law.

§ 2 ONLINE REGISTRATION

Please do remember to register your new BEHRINGER equipment right after your purchase by visiting www.behringer.com (alternatively www.behringer.de) and kindly read the terms and conditions of our warranty carefully.

Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently.

Thank you for your cooperation!

§ 3 WARRANTY

1. BEHRINGER (BEHRINGER International GmbH including all BEHRINGER subsidiaries listed on the enclosed page, except BEHRINGER Japan) warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year* from the original date of purchase, in accordance with the warranty regulations described below. If the product shows any defects within the specified warranty period that are not excluded from this warranty as described under § 5, BEHRINGER shall, at its discretion, either replace or repair the product using suitable new or reconditioned parts. In the case that other parts are used which constitute an improvement, BEHRINGER may, at its discretion, charge the customer for the additional cost of these parts.

2. If the warranty claim proves to be justified, the product will be returned to the user freight prepaid.

3. Warranty claims other than those indicated above are expressly excluded.

§ 4 RETURN AUTHORIZATION NUMBER

1. To obtain warranty service, the buyer (or his authorized dealer) must call BEHRINGER (see enclosed list) during normal business hours **BEFORE** returning the product. All inquiries must be accompanied by a description of the problem. BEHRINGER will then issue a return authorization number.

2. Subsequently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by BEHRINGER.

3. Shipments without freight prepaid will not be accepted.

§ 5 WARRANTY REGULATIONS

1. Warranty services will be furnished only if the product is accompanied by a copy of the original retail dealer's invoice. Any product deemed eligible for repair or replacement under the terms of this warranty will be repaired or replaced.

2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, BEHRINGER shall not be held responsible for any cost resulting from such a modification/adaptation.

3. Free inspections and maintenance/repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, crossfaders, potentiometers, keys/buttons, tubes, guitar strings, illuminants and similar parts.

4. Damages/defects caused by the following conditions are not covered by this warranty:

- ▲ improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals.
- ▲ connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
- ▲ damages/defects caused by force majeure or any other condition that is beyond the control of BEHRINGER.

5. Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the warranty.

6. If an inspection of the product by BEHRINGER shows that the defect in question is not covered by the warranty, the inspection costs are payable by the customer.

7. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. BEHRINGER will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, BEHRINGER will return the unit C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.

§ 6 WARRANTY TRANSFERABILITY

This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of BEHRINGER.

§ 7 CLAIM FOR DAMAGES

Failure of BEHRINGER to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of BEHRINGER exceed the invoiced value of the product.

* Customers in the European Union please contact BEHRINGER Germany Support for further details.

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FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION

BEHRINGER

X V-AMP LX1-X

Responsible party name:	**MUSIC Group Services USA, Inc.**
Address:	**18912 North Creek Parkway, Suite 200 Bothell, WA 98011, USA**
Phone/Fax No.:	**Phone: +1 425 672 0816** **Fax: +1 425 673 7647**

X V-AMP LX1-X

complies with the FCC rules as mentioned in the following paragraph:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Important information:

Changes or modifications to the equipment not expressly approved by MUSIC Group can void the user's authority to use the equipment.